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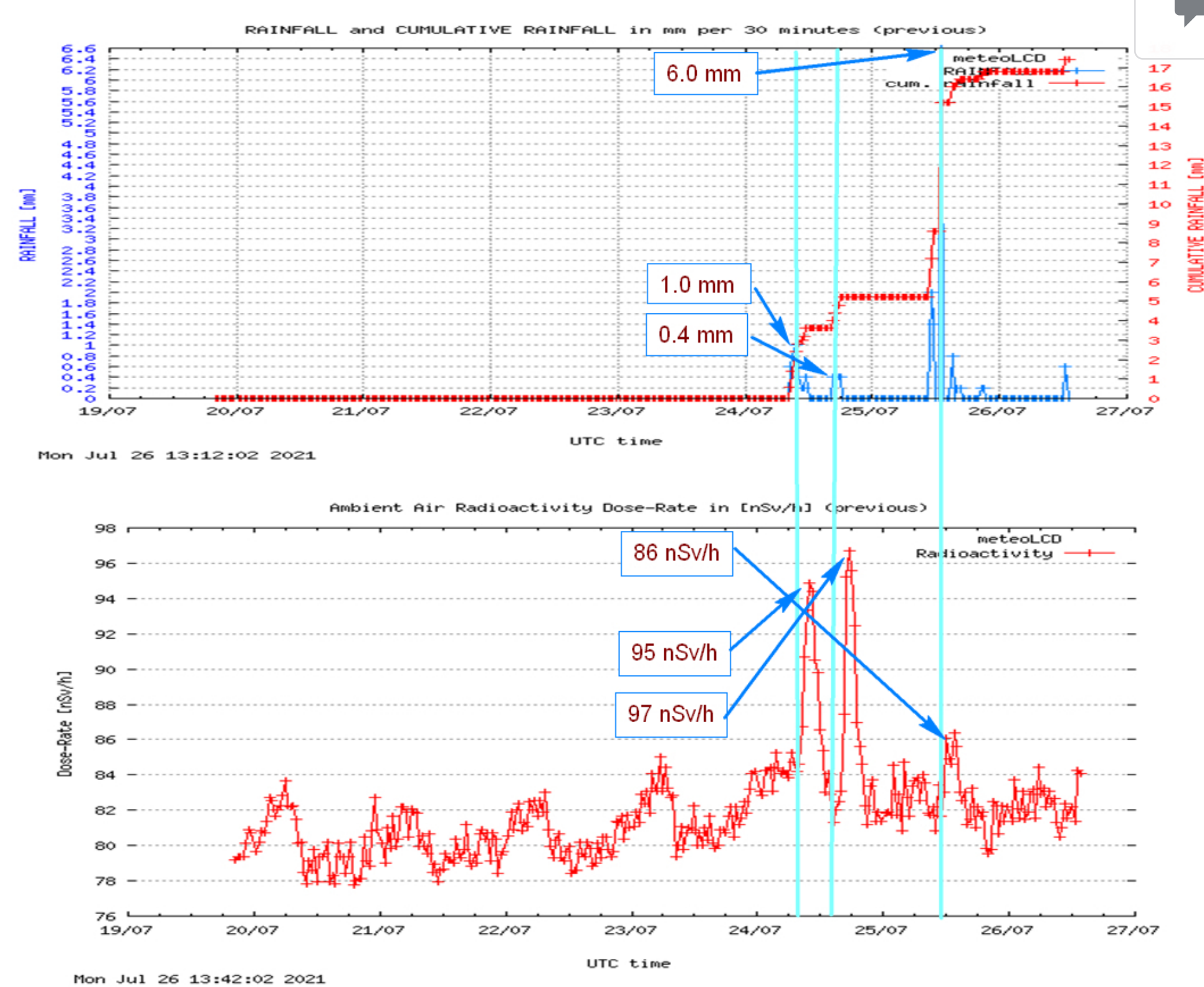
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Radioactivity and precipitation

In the past I have written many times on the observational fact that due to radon washout, the ambient gamma radiation shows sometimes impressive peaks (see [here](#), [here](#), [here](#), [here](#), [here](#)).

In this blog I will show that the graphs of cumulative rainfall and gamma radiation might give a wrong picture, and that using the original time-series yield a more correct insight.

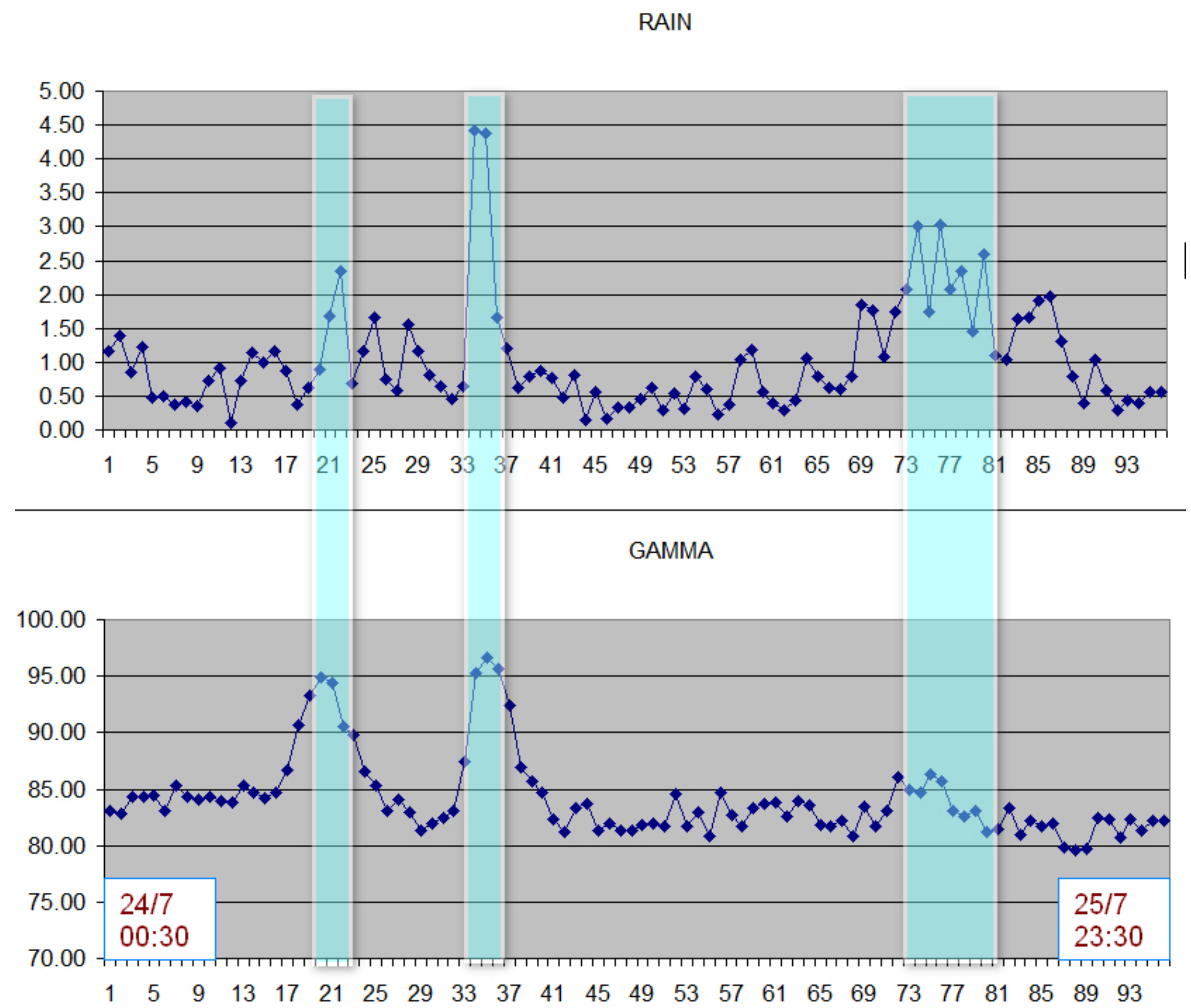
Here what the graphs of cumulative rainfall and gamma radiation of atmospheric air shows for the week covering the 24 and 25 July 2021:



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These graphs are not faulty, but give a wrong picture: the two rainfall peaks cause two radiation peaks, with the second higher than the first, even if its "cause" (= the precipitation in mm per half-hour) is much less. This could be a sign of radon washout during the first peak, and radioactivity levels which have not yet recovered to their usual background. The third precipitation peak during the 25th July does only cause a mild surge of the gamma radiation intensity.

Now let's zoom on the half-hourly levels of precipitation and gamma radiation:

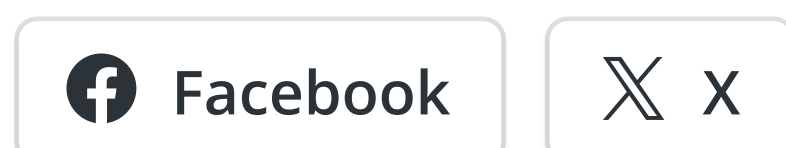


The picture becomes somewhat clearer: there are 2 precipitation peaks during the 24th July 2021, and the intensity of the second is close to the double of the first (the X scale represent the multiples of half-hours, starting at 00:30). The second radiation peak is practically the same as the first: the gamma levels have not sufficiently recovered from the first washout during the approx. 7 hours to yield a proportional higher peak.

The third event during the 25th July is more "smeared out": the total rain volume falls down during ca. 3.5 hours (7 half-hours), and is not concentrated on a single half-hour event. This does not cause a strong radiation increase, even after 20 hours have passed since the last rain-fall peak, a time-span probably long enough to compensate for the previous washout. I suggested in one of the previous blogs a recover period of approx. 1 day.

I always marvel why our "greens" have not yet discovered this natural phenomenon of radiation increase, and not jumped on this pattern which should give a good scare. The second peak here is about 97-85 = 12nSv/h, i.e. 14% higher than the usual background. What would Greenpeace say if radioactivity from the Cattenom nuclear facility had increased by this amount?

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